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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,908	07/12/2002	Makoto Yoneya	220523US0PCT	2995
22850	7590	05/18/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			NGUYEN, HOAN C	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/070,908

Applicant(s)

YONEYA ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 8-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election with traverse of Species A (claims 1, 3-7 and 21) in Paper on Feb. 25, 2005 is acknowledged.

Applicant's arguments regarding the restriction requirement have been considered; however, the traversal was on the grounds that there is no serious burden on the Examiner in examining all of claims 1-21 together. This is not found persuasive since claims 1 and 2 cite "the alignment layer has been subjected to liquid crystal anchoring treatments in two directions to form the different angles relative to each other on the corresponding substrate surface" and "different pre-tilt angles."

Therefore, the requirement is deemed proper and is considered to be final.

Claims 2 and 8-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim. Therefore, ONLY claims 1, 3-7 and 21 are pending in the elected Species.

This is Final Action because it is based on the amendment filed on 8 November 2004.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3-7 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US6091471A).

In regard to claims 1, Kim et al. teach (Figs. 4, 10-14) a liquid crystal display device comprising

- a pair of substrates, at least one of which is inherently transparent for transmitting light through LC cell so that light can be modulated;
- a liquid crystal between the pair of substrates as Figs. 10a-b shown.
- a group of electrodes of a In-Plane Switching (col. 6 line 32) mode liquid crystal cell as inherently
  - formed on at least one of substrates and
  - adapted to apply an electric field to the liquid crystal layer, wherein the electric field inherently having a component substantially parallel to the surfaces due to a In-Plane Switching (IPS) mode liquid crystal cell;
- an alignment layer
  - disposed between the liquid crystal layer and at least one of substrates;
  - having been subjected to liquid crystal anchoring treatments (col. 5 lines 53-55) in plural directions to form a plurality of liquid crystal in-plane

anchoring directions as Fig. 14 with the photo energy more than 6000mJ/cm (Fig. 4, col. 5 lines 30-32), thereby forming a plurality of liquid crystal in-plane anchoring directions.

wherein

- two of liquid crystal in-plane anchoring directions of the alignment layer form substantially equal angles (as Figs. 14a-j shown) on the corresponding substrate surface;
- pretilt angle in one liquid crystal anchoring direction with respect to the corresponding substrate surface is substantially zero when the photo energy more than 6000mJ/cm (Fig. 4, col. 5 lines 30-32) or less than 5° that is in a range 0-5° (col. 1 line 35-36).

wherein

Claim 3:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for performing uniform anchoring treatment over an entire target area in each of the directions as shown (col. 2 lines 31-34).

Claim 4:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for dividing an entire target area into plural sub-areas corresponding to the plural directions and performing anchoring treatment in each of the sub-areas in the corresponding direction (col. 2 lines 14-20).

Claim 5:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for irradiating the alignment layer with linearly polarized light that can cause a chemical reaction on the surface of the corresponding substrate (col. 2 lines 21-27).

Claim 6:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for scanning the alignment layer with a probe that can impart stress to the surface of the corresponding substrate (mechanical rubbing with friction on alignment layers as shown in Fig. 11a).

Claim 7:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for scanning the alignment layer as Figs. 3 and 14a-j shown with UV light that can cause inherently a chemical reaction on the surface of the corresponding substrate.

Claim 21:

- the device is capable of maintaining of two of stable in-plane alignment state crystal (two domains) even after the removal of the applied electric field as Figs. 10a-b and 14a-j shown.

### **Response to Arguments**

Applicant's arguments filed on 8 November 2004 have been fully considered but they are not persuasive.

#### Applicant's ONLY arguments are follows:

- A. Kim fails to describe or suggest a liquid crystal device wherein the pretilt angle in each of the plurality of liquid crystal anchoring direction with respect to the corresponding substrate surface is substantially zero.
- B. Kim fails to describe or suggest a device wherein the device is capable of maintaining a plurality of stable in-plane alignment states of the liquid crystal layer even after the removal of the applied electric field, as presently claimed.

#### Examiner's responses to Applicants' ONLY arguments are follows:

- A. Kim discloses a liquid crystal device wherein the pretilt angle in each of the plurality of liquid crystal anchoring direction with respect to the corresponding substrate surface is substantially zero when the photo energy more than 6000mJ/cm (Fig. 4, col. 5 lines 30-32) or less than 5° that is in a range 0-5° (col. 1 line 35-36).
- B. Kim discloses a device wherein the device is capable of maintaining a plurality of stable in-plane alignment states (plurality of domains) of the liquid crystal layer even after the removal of the applied electric field (OFF) as Fig. 10a shown and 14a-j shown with the photo energy more than 6000mJ/cm (Fig. 4, col. 5 lines 30-32), thereby forming a plurality of liquid crystal in-plane anchoring directions.

***Conclusion***

Applicant's amendment filed on 8 November 2004 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on **MONDAY-THURSDAY:8:00AM-4:30PM**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H. Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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HOAN C. NGUYEN  
Examiner  
Art Unit 2871



DUNG T. NGUYEN  
PRIMARY EXAMINER